General

Guideline Title

Crizotinib for previously treated non-small-cell lung cancer associated with an anaplastic lymphoma kinase fusion gene.

Bibliographic Source(s)

National Institute for Health and Care Excellence (NICE). Crizotinib for previously treated non-small-cell lung cancer associated with an anaplastic lymphoma kinase fusion gene. London (UK): National Institute for Health and Care Excellence (NICE); 2013 Sep. 55 p. (Technology appraisal guidance; no. 296).

Guideline Status

This is the current release of the guideline.

Recommendations

Major Recommendations

Crizotinib is not recommended within its marketing authorisation, that is, for treating adults with previously treated anaplastic lymphoma kinase (ALK)-positive advanced non-small-cell lung cancer (NSCLC).

People currently receiving crizotinib that is not recommended according to the above recommendations should be able to continue treatment until they and their clinician consider it appropriate to stop.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Previously treated non-small-cell lung cancer (NSCLC) associated with an anaplastic lymphoma kinase (ALK) fusion gene

Guideline Category

Assessment of Therapeutic Effectiveness

Treatment

Clinical Specialty

Family Practice

Internal Medicine

Medical Genetics

Oncology

Pulmonary Medicine

Intended Users

Advanced Practice Nurses

Nurses

Physician Assistants

Physicians

Guideline Objective(s)

To evaluate the clinical effectiveness and cost-effectiveness of crizotinib for previously treated non-small-cell lung cancer (NSCLC) associated with an anaplastic lymphoma kinase (ALK) fusion gene

Target Population

Adults with previously treated anaplastic lymphoma kinase (ALK)-positive advanced non-small-cell lung cancer (NSCLC)

Interventions and Practices Considered

Crizotinib (not recommended)

Major Outcomes Considered

- Clinical effectiveness
  - Progression-free survival (PFS)
  - Overall survival (OS)
  - Objective response rate (ORR)
  - Duration of response
  - Disease control rate
  - Rank-preserved structural failure time (RPSFT)
  - Inverse probability of treatment and censoring weighted (IPTCW)
  - Medication-related adverse events
  - Health-related quality of life (HRQoL)
- Cost-effectiveness

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Searches of Unpublished Data

Description of Methods Used to Collect/Select the Evidence

Note from the National Guideline Clearinghouse (NGC): The National Institute for Health and Care Excellence (NICE) commissioned an independent academic centre to perform an assessment of the manufacturer's submission on the technology considered in this appraisal and prepare an Evidence Review Group (ERG) report. The ERG report for this technology appraisal was prepared by the Centre for Reviews and Dissemination/Centre for Health Economics (see the "Availability of Companion Documents" field).

Clinical Effectiveness

Searches

The manufacturer's submission (MS) gave detailed descriptions of the search strategies to identify:

1. Studies for a systematic review of all published research relating to the efficacy and safety of second-line treatments for anaplastic lymphoma kinase (ALK)-positive advanced or metastatic non-small-cell lung cancer (NSCLC) patients inclusive of crizotinib
2. A broader set of studies investigating a range of drugs in a more general population of patients with NSCLC for a mixed treatment comparison

Both strategies included a list of the specific databases searched, the service providers used, the dates across which the searches were conducted, the search strategies used, and the total numbers of studies retrieved. Both searches met NICE requirements, including a search of all of the databases required by NICE in the specification for MS of evidence (MEDLINE, MEDLINE In-Process, EMBASE, and the Cochrane Library). In addition, the bibliographies of systematic reviews were hand-searched for additional systematic reviews and meta-analyses to inform the evaluation of the efficacy and safety of crizotinib. Searches of the conference proceedings of the American Society of Clinical Oncology, European Lung Cancer Conference, European Multidisciplinary Cancer Congress and World Conference on Lung Cancer were also performed.

The search terms used for each search facet in both searches were appropriate, with the correct use of Boolean operators, truncation and wildcards. The searches for the systematic review specifically in ALK-positive NSCLC patients were not restricted by study design, therefore, non-randomised studies and studies likely to report crizotinib-related adverse events would have been identified. The searches for the mixed treatment comparison (MTC) were restricted using filters for randomised controlled trials (RCT) and quality of life (QoL); given the role of drugs other than crizotinib and docetaxel in the population of interest, the ERG consider this to be appropriate. The ERG did note that the combination of Medical Subject Heading (MeSH) terms used in two searches appeared to be incorrect, and the MeSH term 'Lung Neoplasms' was not used, however, the ERG don't believe the manufacturer has missed any relevant, completed, studies. The ERG conducted an additional search of trials registries to identify any ongoing studies that may not have been included in the MS. They identified a number of ongoing Pfizer-sponsored studies that are summarised in Section 4.4 and Appendix 11.1 of the ERG report.

Inclusion Criteria

The two parts of the systematic review had different inclusion criteria for the eligible population:

- *The specific ALK-positive search*: Adults with advanced or metastatic NSCLC, identified as being positive for the ALK fusion, or patients matched to this population
- *The broader search for NSCLC patients*: Adults with molecularly defined NSCLC

The inclusion criteria for the two searches were the same for the remainder of the review question:

- *Intervention*: Crizotinib

- *Comparators*: Any
- *Outcomes*: Overall survival (OS), progression-free survival (PFS), time to progression (TTP), tumour response rate (objective response rate [ORR]), partial response, stable disease), duration of response, safety and tolerability
- Study design: RCT, non-RCT, observational studies, retrospective analyses

Given the manufacturer's stance on the use of erlotinib, restriction to docetaxel and best supportive care (BSC) as comparators could have been expected. However, the MS does utilise data from erlotinib and gefitinib, and PROFILE 1007 uses pemetrexed in the comparator arm.

Cost-effectiveness

ERG Comment on Manufacturer's Review of Cost-effectiveness Evidence

Searches

The manufacturer conducted three searches for the review of cost-effectiveness. These aimed to identify:

1. Economic evaluations of patients with advanced/metastatic (stage IIIb/IV) NSCLC treated with pharmaceutical interventions currently used in clinical practice
2. Measurement and valuation of health effects (health-related quality of life [HRQoL] data relating to NSCLC)
3. Resources, measurement and valuation (cost studies in advanced lung cancer)

Each search included all the databases specified by NICE in the specification for manufacturer submission of evidence; MEDLINE, MEDLINE In-Process, EMBASE, EconLIT and National Health Service Economic Evaluation Database (NHS EED). Hand-searches of the conference proceedings of key societies were also undertaken for the review of economic evaluations, and various health technology assessment (HTA) Web sites were searched to identify economic models for each of the searches. The MS gave detailed descriptions for each of the search strategies, which largely met NICE requirements. They included the specific databases searched; the service providers used; the dates across which the searches were conducted; and the complete strategies used. No details of the EconLit strategy were included in the MS. The search terms used for each search facet were generally appropriate, with the correct use of Boolean operators, truncation and wildcards. Crizotinib was not included in the search terms used for pharmaceutical interventions for NSCLC, although in MEDLINE and EMBASE broader index terms were included in the strategy that were likely to have captured cost-effectiveness studies of crizotinib. Therefore, although there was the potential for relevant cost-effectiveness studies of crizotinib to have been missed, the ERG does not believe this to be the case, within the dates searched by the manufacturer. It is worth noting that the searches for the economic sections of the MS were conducted in October 2011, and were therefore conducted a year prior to the submission. As a consequence, a 2012 publication was missed by the manufacturer.

Inclusion/Exclusion Criteria Used for Study Selection

The manufacturer searched for economic evaluations, including cost-effectiveness, cost-utility and cost-benefit analyses. To be included in the analysis, a study had to report on one of a range of treatments currently available in clinical practice, including crizotinib. The ERG believes that the inclusion/exclusion criterion was reasonable, and would have identified any relevant studies.

Number of Source Documents

Clinical Effectiveness

The following studies were included:

- One randomised controlled trial (RCT) (PROFILE 1007)
- Two ongoing single-arm studies
- Three additional studies for mixed treatment comparison

Cost-effectiveness

- No published studies were included.
- The manufacturer presented an economic model.

Methods Used to Assess the Quality and Strength of the Evidence

Expert Consensus

Rating Scheme for the Strength of the Evidence

Not applicable

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Note from the National Guideline Clearinghouse (NGC): The National Institute for Health and Care Excellence (NICE) commissioned an independent academic centre to perform an assessment of the manufacturer's submission on the technology considered in this appraisal and prepare an Evidence Review Group (ERG) report. The ERG report for this technology appraisal was prepared by the Centre for Reviews and Dissemination/Centre for Health Economics (see the "Availability of Companion Documents" field).

Clinical Effectiveness

Critique of Data Extraction

Data were extracted by one reviewer and checked by a second in order to calculate hazard ratios (HRs) or risk ratios (RRs) with 95% confidence intervals (CI); this is an appropriate method that reduces the potential for error and bias during the data extraction process.

Quality Assessment

The manufacturer assessed the quality of the PROFILE studies, and the JMEI (a phase III randomised controlled trial [RCT] comparing docetaxel and pemetrexed), GFPC 05-06 (Groupe Français de Pneumo-Cancérologie 05-06 phase III RCT comparing docetaxel and pemetrexed) and TAX 317 (a phase III RCT comparing Taxotere [docetaxel] and best supportive care [BSC]) trials using seven appropriate criteria specific to RCTs. PROFILE and 1001 and 1005 were assessed using 27 appropriate criteria from the Downs and Black checklist for non-randomised studies. The areas covered were reporting, external validity, internal validity, the assessment of confounding factors, and statistical power. The studies of erlotinib and gefitinib that were included in the mixed treatment comparisons (MTCs) do not appear to have been quality assessed.

Evidence Synthesis

Detailed results were presented for the PROFILE 1005 and 1007 trials separately. There was no standard meta-analysis of the studies identified that evaluated crizotinib. A number of MTCs were conducted, two comparing crizotinib with pemetrexed, docetaxel, and BSC, and further MTCs that included studies of epidermal growth factor receptor tyrosine kinase inhibitors (EGFR TKIs).

To populate the economic model, the manufacturer extrapolated from PROFILE 1005 to estimate overall survival (OS) for the crizotinib arm, and used adjusted data from PROFILE 1007 to estimate OS for the chemotherapy arms. Data from an MTC comparing crizotinib with pemetrexed, docetaxel and BSC was used to derive a relative OS effect for the comparison between crizotinib and BSC. Progression-free survival (PFS) was extrapolated from PROFILE 1007 for the crizotinib and chemotherapy arms. The manufacturer stated that data were available for PFS for BSC, but a hazard ratio (HR) was not provided, therefore they concluded that they could not conduct a MTC using PFS data.

Refer to Section 4 of the ERG report for additional information on clinical effectiveness.

Cost-effectiveness

Model Structure

The *de novo* analysis presented by the manufacturer uses a three health state model which the manufacturer refers to as a semi-Markov 'area under the curve' analysis (see Figure 6 of the ERG report). The three states are: (1) Progression free (PF); (2) Progressed disease (PD); and (3) Death, which is the absorbing state. Patients enter the model in the PF state and, at each 30 days cycle, they can remain in PF or transition through the model to PD or Death. No reversion from the PD state to the PF state is possible. All patients in the model were assumed to be anaplastic

lymphoma kinase (ALK)-positive, as testing was assumed to be performed prior to, or during, first-line treatment.

Refer to Table 23 of the ERG report for summary of the manufacturer's economic evaluation.

The Manufacturer's Economic Evaluation Compared to the NICE Reference Case Checklist

Refer to the table in Section 5.2.2 of the ERG report for the comparison.

The transitions were informed from several data sources and different methods were applied to each of the treatments evaluated. For crizotinib, the proportion of patients in the different health states at each cycle was calculated from parametric survival curves fitted to empirical data on PFS (PROFILE 1007) and OS (PROFILE 1005). The use of parametric curves enabled the observed data to be extrapolated beyond the follow-up period of the trial data in order to estimate mean survival times required for the cost-effectiveness analysis. The proportion of patients in the PD state, at each cycle, was calculated as the difference between OS and PFS fitted curves. This type of model has also been referred to as a "partitioned" survival model, and has been used previously in other submissions to NICE.

For docetaxel, a separate, independent parametric function was fitted to PFS (using data from the docetaxel subgroup of PROFILE 1007) and OS was estimated by applying the crossover-adjusted hazard ratio to the parametric OS function calculated for crizotinib. For BSC, the same parametric function applied to docetaxel was used for PFS. However, a separate hazard ratio was then applied to the OS function for crizotinib based on the results of the MTC analysis discussed in Section 4.3.2 of the ERG report, using the estimated HR of crizotinib versus BSC.

Sensitivity Analyses

The manufacturer presented a series of one-way deterministic sensitivity analyses (DSAs) to assess the impact of uncertainty around key input variables on the incremental cost-effectiveness ratios (ICERs). The majority of parameters (prevalence, costs, utilities and discount rates) were stated to have been varied across a range from 20% below to 20% above the initial base-case point estimate. The results for crizotinib compared to docetaxel are presented in Figure 9 of the ERG report.

The manufacturer's submission (MS) also included a series of scenario analyses that were performed to check the robustness of the model to uncertainty related to structural assumptions. The main analyses are reported in Table 33 of the ERG report for crizotinib compared to docetaxel.

Finally, the manufacturer completed probabilistic sensitivity analysis (PSA), from which cost-effectiveness acceptability curves (CEACs) were derived. The CEAC for crizotinib versus docetaxel is presented in Figure 10 of the ERG report.

Refer to Section 5 of the ERG report for more information on cost-effectiveness analysis.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Considerations

Technology appraisal recommendations are based on a review of clinical and economic evidence.

Technology Appraisal Process

The National Institute for Health and Care Excellence (NICE) invites 'consultee' and 'commentator' organisations to take part in the appraisal process. Consultee organisations include national groups representing patients and carers, the bodies representing health professionals, and the manufacturers of the technology under review. Consultees are invited to submit evidence during the appraisal and to comment on the appraisal documents.

Commentator organisations include manufacturers of the products with which the technology is being compared, the National Health Service (NHS) Quality Improvement Scotland and research groups working in the area. They can comment on the evidence and other documents but are not asked to submit evidence themselves.

NICE then commissions an independent academic centre to review published evidence on the technology and prepare an 'assessment report'. Consultees and commentators are invited to comment on the report. The assessment report and the comments on it are then drawn together in a document called the evaluation report.

An independent Appraisal Committee then considers the evaluation report. It holds a meeting where it hears direct, spoken evidence from nominated clinical experts, patients and carers. The Committee uses all the evidence to make its first recommendations, in a document called the 'appraisal consultation document' (ACD). NICE sends all the consultees and commentators a copy of this document and posts it on the NICE website. Further comments are invited from everyone taking part.

When the Committee meets again it considers any comments submitted on the ACD; then it prepares its final recommendations in a document called the 'final appraisal determination' (FAD). This is submitted to NICE for approval.

Consultees have a chance to appeal against the final recommendations in the FAD. If there are no appeals, the final recommendations become the basis of the guidance that NICE issues.

Who Is on the Appraisal Committee?

NICE technology appraisal recommendations are prepared by an independent committee. This includes health professionals working in the NHS and people who are familiar with the issues affecting patients and carers. Although the Appraisal Committee seeks the views of organisations representing health professionals, patients, carers, manufacturers and government, its advice is independent of any vested interests.

Rating Scheme for the Strength of the Recommendations

Not applicable

Cost Analysis

Summary of Appraisal Committee's Key Conclusions on the Evidence for Cost-effectiveness

Availability and Nature of Evidence

The manufacturer developed a 3-state model, which it referred to as a semi-Markov area-under-the-curve analysis. The model used estimates of treatment effectiveness from PROFILE 1005, PROFILE 1007 and a mixed treatment comparison.

Uncertainties Around and Plausibility of Assumptions and Inputs in the Economic Model

The Committee discussed the manufacturer's justification for preferring 1 crossover-adjustment method, noting that, of the different statistical methods, inverse probability of treatment and censoring weighted (IPTCW5) gave the most favourable overall survival benefit for crizotinib. The Committee noted that the manufacturer's chosen method resulted in a modelled progression-free survival (PFS) gain of 5.7 months, and an overall survival gain of 12.3 months for crizotinib and that this large gain in overall survival compared with PFS was not supported by any evidence. The Committee concluded that the manufacturer's application of the chosen method for adjusting for crossover (IPTCW5) produced an overly optimistic overall survival benefit for crizotinib, for which there was no supporting evidence.

The Committee concluded that the results from the mixed treatment comparison were subject to uncertainty given the significant heterogeneity in the included studies. It further concluded that the resulting hazard ratio for overall survival for crizotinib compared with best supportive care (BSC) should be viewed with considerable caution and that as a result, the relative effect of crizotinib compared with BSC remained an area of substantial uncertainty.

Incorporation of Health-Related Quality-of-Life Benefits and Utility Values

The Committee discussed the utility estimates in the model. It noted that the baseline utility estimates were different between the groups at entry into the study, and specifically that the mean baseline utility value for crizotinib was higher than for chemotherapy. The manufacturer confirmed that this had not been adjusted for in the model.

The Committee also noted the difference in utility values for the progressed disease health state between crizotinib and chemotherapy and observed that these post-progression utilities had been measured at the outset of the progressed disease state and continued at that value until death. The Committee accepted that some utility benefit might be expected from crizotinib discontinued at disease progression, though there are no data to suggest how great a benefit this might be or for how long it would persist. The Committee concluded that the manufacturer's revised post-progression utilities represented a partial solution to the estimation of these values but that the utility estimates in the post-progression state remained very uncertain because of the lack of data in the post-progression period.

What Are the Key Drivers of Cost-effectiveness?

The Committee considered the most plausible cost-effectiveness estimates of crizotinib compared with docetaxel and BSC. The Committee agreed that the exact gain in overall survival from treatment with crizotinib was very uncertain and an exact value could not be reliably established from the available data; however for the purposes of the economic model the IPTCW2 was the most reasonable method on which to base its decision. This method produced a result between the two extremes of the IPTCW5 and rank-preserved structural failure time (RPSFT) methods, broadly in agreement with clinical opinion. For the comparison with BSC, the Committee concluded that the incremental cost effectiveness ratio (ICER) was associated substantial uncertainty, which it is not possible to quantify because of the lack of a robust mixed treatment comparison between crizotinib and BSC.

Most Likely Cost-effectiveness Estimate (Given as an ICER)

The Committee concluded that the ICER on which to base a decision for crizotinib compared with docetaxel would be more than £100,000 per quality-adjusted life years (QALY) gained. The Committee concluded that the ICER on which to base a decision for crizotinib compared with best supportive care would be more than £50,200 per QALY gained. However, the Committee further concluded that this ICER was associated with a substantial amount of uncertainty, which it was not possible to quantify because of the lack of a robust mixed treatment comparison between crizotinib and best supportive care.

Refer to Sections 3 and 4 of the original guideline document for additional information on cost-effectiveness.

Method of Guideline Validation

External Peer Review

Description of Method of Guideline Validation

Consultee organisations from the following groups were invited to comment on the draft scope, Assessment Report and the Appraisal Consultation Document (ACD) and were provided with the opportunity to appeal against the Final Appraisal Determination.

- Manufacturer/sponsors
- Professional/specialist and patient/carer groups
- Commentator organisations (without the right of appeal)

In addition, individuals selected from clinical expert and patient advocate nominations from the professional/specialist and patient/carer groups were also invited to comment on the ACD.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of evidence supporting the recommendations is not specifically stated.

The Appraisal Committee considered clinical and cost-effectiveness evidence submitted by the manufacturer of crizotinib and a review of this submission by the Evidence Review Group (ERG). For clinical effectiveness, one randomised controlled trial (RCT) was the main source of evidence. For cost-effectiveness, the manufacturer's model was considered.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Appropriate use of crizotinib for previously treated non-small-cell lung cancer (NSCLC) associated with an anaplastic lymphoma kinase (ALK) fusion gene

Potential Harms

The summary of product characteristics lists the following as the most common adverse reactions associated with crizotinib treatment: visual impairment, diarrhoea, nausea, vomiting, constipation, oedema, fatigue, decreased appetite, neutropenia, and elevated aminotransferases.

For full details of adverse reactions, see the summary of product characteristics.

Contraindications

Contraindications

For full details of contraindications, see the summary of product characteristics.

Qualifying Statements

Qualifying Statements

- This guidance represents the views of the National Institute for Health and Care Excellence (NICE) and was arrived at after careful consideration of the evidence available. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. However, the guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.
- Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to avoid unlawful discrimination and to have regard to promoting equality of opportunity. Nothing in this guidance should be interpreted in a way which would be inconsistent with compliance with those duties.

Implementation of the Guideline

Description of Implementation Strategy

The National Institute for Health and Care Excellence (NICE) has developed costing statement explaining the resource impact of this guidance. This tool is available from the NICE Web site (see also the "Availability of Companion Documents" field).

Implementation Tools

Patient Resources

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

End of Life Care

Living with Illness

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

National Institute for Health and Care Excellence (NICE). Crizotinib for previously treated non-small-cell lung cancer associated with an anaplastic lymphoma kinase fusion gene. London (UK): National Institute for Health and Care Excellence (NICE); 2013 Sep. 55 p. (Technology appraisal guidance; no. 296).

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2013 Sep

Guideline Developer(s)

National Institute for Health and Care Excellence (NICE) - National Government Agency [Non-U.S.]

Source(s) of Funding

National Institute for Health and Care Excellence (NICE)

Guideline Committee

Appraisal Committee

Composition of Group That Authored the Guideline

Committee Members: Dr Brian Shine (*Chair*), Consultant Chemical Pathologist, John Radcliffe Hospital, Oxford; Professor Jonathan Michaels (*Vice Chair*), Professor of Clinical Decision Science, University of Sheffield; Professor Kathryn Abel, Director of Centre for Women's Mental Health, University of Manchester; Dr Aomesh Bhatt, Regulatory and Medical Affairs Director Europe and North America, Reckitt Benckiser; Dr Andrew Black, General Practitioner, Mortimer Medical Practice, Herefordshire; Dr Matthew Bradley, Therapy Area Leader, Global Health Outcomes, GlaxoSmithKline; Dr Ian Campbell, Honorary Consultant Physician, Llandough Hospital, Cardiff; Professor Usha Chakravarthy, Professor of Ophthalmology and Vision Sciences, The Queen's University of Belfast; Professor Peter Clark, Consultant Medical Oncologist, Clatterbridge Centre for Oncology; Tracey Cole, Lay Member; Dr Ian Davidson, Lecturer in Rehabilitation, University of Manchester; John Dervan, Lay Member; Professor Simon Dixon, Professor of Health Economics, University of Sheffield; Dr Martin Duerden, Assistant Medical Director, Betsi Cadwaladr University Health Board, North Wales; Dr Alexander Dyker, Consultant Physician, Wolfson Unit of Clinical Pharmacology, University of Newcastle; Christopher Earl, Surgical Care Practitioner, Wessex Neurological Centre at Southampton University

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Financial Disclosures/Conflicts of Interest

Committee members are asked to declare any interests in the technology to be appraised. If it is considered there is a conflict of interest, the member is excluded from participating further in that appraisal.

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available from the National Institute for Health and Care Excellence (NICE) Web site .

Availability of Companion Documents

The following are available:

- Duarte A, Burch J, Smith A, Walker S, Fox D, Rodriguez-Lopez R, Palmer S, Eastwood A. Crizotinib for the treatment of previously treated non-small-cell lung cancer associated with an anaplastic lymphoma kinase (ALK) fusion gene: a single technology appraisal. York (UK): Centre for Reviews and Dissemination/Centre for Health Economics; 2013. 124 p. Electronic copies: Available in Portable Document Format (PDF) from the National Institute for Health and Care Excellence (NICE) Web site .
- Crizotinib for previously treated non-small-cell lung cancer associated with an anaplastic lymphoma kinase fusion gene. Costing statement. London (UK): National Institute for Health and Care Excellence (NICE); 2013 Sep. 3 p. (Technology appraisal guidance; no. 296). Electronic copies: Available in PDF from the NICE Web site .

Patient Resources

The following is available:

- Crizotinib for previously treated non-small-cell lung cancer. Information for the public. London (UK): National Institute for Health and Care Excellence (NICE); 2013 Sep. (Technology appraisal guidance; no. 296). 5 p. Electronic copies: Available in Portable Document Format (PDF) from the National Institute for Health and Care Excellence (NICE) Web site .

NGC Status

This NGC summary was completed by ECRI Institute on November 20, 2013.

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